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Therefore, this

United States Patent

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Bruce Lehman
Commissioner of Patents and Trademarks

Pandra Morton
Attest



US005649778A

United States Patent [19]
Lin

[11] **Patent Number:** **5,649,778**
[45] **Date of Patent:** **Jul. 22, 1997**

[54] **MULTI-DIRECTIONAL HYDRAULIC SWIVEL JOINT**

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[21] **Appl. No.:** **654,141**

[22] **Filed:** **May 28, 1996**

[51] **Int. Cl.⁶** **F16D 3/16**

[52] **U.S. Cl.** **403/31; 403/57; 403/74; 464/27; 464/136**

[58] **Field of Search** **403/57, 74, 31, 403/15; 464/27, 136, 24, 106, 112**

[56] **References Cited**

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[57] **ABSTRACT**

A multi-directional swivel joint for carrying loading members comprises a crosswise main body having a pair of first and a pair of second hollow cylinder members perpendicular to one another each having connected with a stepped neck member at their free end and pivotally and intersectionally coupled with a pair of lug members so as to permit the main body swiveling alternatively therewithin in multi-directions. A piston member slidably disposed into each of the hollow cylinder members for defining a pair of first and second cylinder chambers which respectively communicate with an ambient hydraulic compressor via a pair of the first and second conduits through the piston member therein, in addition to a retaining ring sleeved on the free end of the piston member and secured by nut. So that the coupling of the main body with the lug members can be tightened or released upon the alternative exertion of the hydraulic force from the ambient compressor.

6 Claims, 4 Drawing Sheets

